UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,404	03/01/2004	Richard Andrew Holland	120478	1472

			EXAMINER
30330 . 7590 03/09/2006			PRETLOW, DEMETRIUS R

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ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _1_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _01 March 2004_.

2a)☐ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-65_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) _1-65_ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Claims 1-8, drawn to method establishing initial particles in environmental conditions, classified in class 703 subclass 7.

II.   Claim 9-14,46,48,57 drawn to method assigning discrete particle tallies to voxel volume, surfaces and function coefficients, classified in class 382, subclass 128.

III.   Claim 15,30-33,47,52,54 drawn to method specifying a unique descriptor ray set traversal path, classified in class 378, subclass 11.

IV.   Claim 16-21,34-37,44,45,49,50,53,55 drawn to method specifying material composition within voxels, classified in class 378, subclass 7.

V.   Claim 22-29,38,40-43,51,58-64 drawn to method of computing particle transport including constructing a grid system of voxels representing a physical system, classified in class 345, subclass 424.

VI. Claim 39, 56 drawn to method of computing particle interactions within voxels including computing collision probabilities within voxel volumes, classified in class 702, subclass 181.

VII. Claim 65, drawn to method of accumulating ray tracing results to a multiplier field including selecting points upon a surface or within a volume classified in class 378, subclass 4.

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as in a method establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions I and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions I and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions I and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions I and VII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as establishing initial particles in environmental conditions. See MPEP § 806.05(d).

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as assigning discrete particle tallies to voxel volumne, surfaces and function coefficients. See MPEP § 806.05(d).

Inventions II and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as assigning discrete particle tallies to voxel volumne, surfaces and function coefficients. See MPEP § 806.05(d).

Inventions II and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as assigning discrete particle tallies to voxel volumne, surfaces and function coefficients. See MPEP § 806.05(d).

Inventions II and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as assigning discrete particle tallies to voxel volumne, surfaces and function coefficients. See MPEP § 806.05(d).

Inventions II and VII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as assigning discrete particle tallies to voxel volumne, surfaces and function coefficients. See MPEP § 806.05(d).

Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination

is separately usable. In the instant case, subcombination III has separate utility such as specifying a unique descriptor ray set traversal path. See MPEP § 806.05(d).

Inventions III and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination III has separate utility such as specifying a unique descriptor ray set traversal path. See MPEP § 806.05(d).

Inventions III and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination III has separate utility such as specifying a unique descriptor ray set traversal path. See MPEP § 806.05(d).

Inventions III and VII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination III has separate utility such as specifying a unique descriptor ray set traversal path. See MPEP § 806.05(d).

Inventions IV and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination

is separately usable. In the instant case, subcombination IV has separate utility such as specifying material composition within voxels. See MPEP § 806.05(d).

Inventions IV and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination IV has separate utility such as specifying material composition within voxels. See MPEP § 806.05(d).

Inventions IV and VII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination IV has separate utility such specifying material composition within voxels. See MPEP § 806.05(d).

Inventions V and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination V has separate utility such as including constructing a grid system of voxels representing a physical system. See MPEP § 806.05(d).

Inventions V and VII are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not

overlap in scope and are not obvious variants, and if it is shown that at least one

subcombination is separately usable. In the instant case, subcombination V has

separate utility such including constructing a grid system of voxels representing a

physical system. See MPEP § 806.05(d).

Inventions VI and VII are related as subcombinations disclosed as usable

together in a single combination. The subcombinations are distinct if they do not

overlap in scope and are not obvious variants, and if it is shown that at least one

subcombination is separately usable. In the instant case, subcombination VI has

separate utility such computing particle interactions within voxels including computing

collision probabilities within voxel volumes. See MPEP § 806.05(d).

Because these inventions are independent or distinct for the reasons given

above and the inventions require a different field of search (see MPEP § 808.02),

restriction for examination purposes as indicated is proper.

A telephone call was made to Livinia Jones on March 6, 2006 to request an oral

election to the above restriction requirement, but did not result in an election being

made.

Applicant is advised that the reply to this requirement to be complete must

include (i) an election of a species or invention to be examined even though the

requirement be traversed (37 CFR 1.143) and (ii) identification of the claims

encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To

reserve a right to petition, the election must be made with traverse. If the reply does not

distinctly and specifically point out supposed errors in the restriction requirement, the

election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not

patentably distinct, applicant should submit evidence or identify such evidence now of

record showing the inventions or species to be obvious variants or clearly admit on the

record that this is the case. In either instance, if the examiner finds one of the inventions

unpatentable over the prior art, the evidence or admission may be used in a rejection

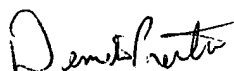under 35 U.S.C.103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Demetrius R. Pretlow whose telephone number is (571)

272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.
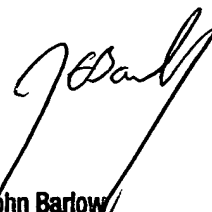
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow   3/6/06

Patent Examiner

John Barlow
Supervisory Patent Examiner
Technology Center 2800